ABSTRACT OF DISCLOSURE

A raking receiver is provided in a in a wireless network. The raking receiver includes an antenna, first through Nth wavelet forming networks, first through Nth weighting mixers, a summer, a path mixer, and a signal processing circuit. The antenna receives an incoming signal. The first through Nth wavelet forming networks produce first through Nth locally generated wavelets. The first through Nth weighting mixers multiply the first through Nth locally generated wavelets by first through Nth weighting values, respectively, to produce first through Nth weighted wavelets. The summer adds together the first through Nth weighted wavelets to produce a weighted correlation input signal. The path mixer multiplies the incoming signal with the weighted correlation input signal to produce a correlated signal. And the signal processing circuit receives the main correlating circuit and produces a digital bit value. N is preferably an integer greater than 1.